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CONTENTS FOR WEEK OF APRIL 9, 1923. Vol. II. No. 6.

1. The Future of Flying.
2. Dedeagatch: May Be Bulgaria's Window to South.
3. The Sahara: What We Do and Do Not Know About It.
4. Alias Warsaw, Poland.
5. Hungary's Great Lake Runs Away.

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FROM AN AIRPLANE THE TIGRIS RIVER WINDS LIKE A HUGE SNAKE

The most distant point on the River Tigris shown in the picture is 50 miles away. Bagdad is in the lower foreground.

DO YOU WISH YOUR BULLETINS CONTINUED?

Requests for the Geographic News Bulletin must be renewed if you asked for them last April. If you desire the Bulletins continued please notify The National Geographic Society, Washington, D. C., promptly. The blank following Bulletin No. 1 may be used.

The Geographic News Bulletin is published weekly throughout the school year (thirty issues) and will be mailed to teachers for one year upon receipt of 25 cents (in stamps or money order). .Entered as second-class matter, January 27, 1922, at the Post Office at Washington, D. C., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized February 9, 1922.

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The Future of Flying

AVIATION by radio is one of the early developments of air travel predicted by Brig. Gen. William Mitchell, Assistant Chief of the Air Service of the U. S. Army, in a communication to the National Geographic Society.

"Aeronautics is progressing more rapidly at this time, both from a scientific standpoint—as far as the development of flying machines of all kinds is concerned—and also in the art of actually handling and flying planes," General Mitchell writes.

Can Rise Vertically

"A speed of two hundred miles an hour has been accomplished. To rise vertically from the ground is an accomplished fact. We are able to fly at night, through the storms, and through the fog. Our worst enemy is fog near the ground, and even there we are making progress in eliminating fog over our landing fields.

"Radio telegraphy makes it possible for us to talk from plane to plane, from the ground to the plane, and from the plane to the ground. Radio is also able to guide us to our landing fields or to any place that we desire to go. In fact, airplanes can be sent on long journeys with no living pilots in them, controlled by gyroscopic instruments. These automatically controlled airplanes rise from the ground and fly at whatever altitude is set.

Radio Controls Plane Fleet

"In addition, by the aid of radio impulses, their courses may be changed or, if blown off the course by the wind, they may be brought back to it. Airplanes may be controlled by radio from the air as well as from the ground, so that it is entirely within the realm of possibility that an airplane with its crew may start out and control a number of others flying near and around it.

"Aircraft are the only things in existence that are able to deliver their cargoes at a station in the air. Nothing can compete with them in this respect, so that, from a military standpoint, when it is desired to deliver a bomb, gun, or observer wherever they will have the most effect on an enemy, aircraft have no equals.

"Each day sees an increase in the radius of action of the airplane. In our own Air Service the airplane has remained aloft for thirty-five hours, and during that time has covered some three thousand miles. The distance from Ireland to Newfoundland is only seventeen hundred miles. One of the great Zeppelin airships turned out by the Germans could carry sufficient fuel to go around the world at the latitude of New York.

Operating Cost Reduced

"From a commercial standpoint, as a means of transportation for passengers and freight, the airplane is expensive, but the saving in time is tremendous. Gradually the operating cost is being reduced, so that aerial means of transporta-

UMI

Photograph by U. S. Army Air Service

LOOKING DOWN ON THE DECKS OF THE U. S. BATTLESHIP "OHIO" FROM AN AIRPLANE

A single air bomb containing from 1,000 to 1,400 pounds of high explosive dropped from an airplane would wreak more destruction on this great floating fortress than 25 large projectiles from an enemy battleship. (See Bulletin No. 1)

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Dedeagatch: May Be Bulgaria's Window to South

FOR many months Bulgaria has been asking for Dedeagatch as an outlet to the sea. From Lausanne the Allies offered her a strip between Dedeagatch and Makri. This she has declined.

In asking for Dedeagatch to provide an Aegean port, Bulgaria expressed as cherished a national ambition as was Russia's yearning for Constantinople and a "warm water outlet."

Twice Bulgaria has had its Aegean doorway in its grasp, and twice it was snatched away, by diplomacy or war. Those occasions, paradoxically, followed victories by Bulgaria. Now that she has come out of a war defeated, the time apparently seems ripe to the Bulgarians for the reversal of the paradox and the gaining of a permanent southern sea entrance to their country.

Grew Like American Boom Town

The Bulgarians look to Dedeagatch as a valuable acquisition, but its value is almost entirely potential. The port has no harbor, but only a roadstead. Probably a great deal of money must be spent before it can be classed among the safe and convenient world ports.

The town itself, situated about 20 miles west of the mouth of the Maritza River, and 40 miles south of the present Bulgarian border, is small. Its population has waxed and waned in recent years with the passage of wars and changes of sovereignty. In 1913 it had close to 10,000 residents.

Its rise had been not unlike that of American "boom" towns of the railway expansion era. It came into existence shortly after the Turks entered Europe, but remained a tiny fishing village until about 1875. It then grew at the cost of Enos, situated at the Maritza's mouth. When the Constantinople-Saloniki railway touched Dedeagatch in 1896 it galvanized the town into rapid growth, and it became the outlet for Turkey's grain, almonds, timber and tobacco from the Maritza valley.

Owned Aegean Ports Twice

Bulgaria's first Aegean port was Kavala, half way between Dedeagatch and Saloniki. This was given to her by the Treaty of San Stefano, following the Russo-Bulgarian defeat of Turkey in 1878. But the powers feared Russia's control of Bulgaria, and by the Berlin Conference, called almost immediately after San Stefano, they took away the territory by which Bulgaria reached the Aegean, and returned it to Turkey.

After the Balkan wars Dedeagatch and a sea frontage extending almost to Kavala were ceded to Bulgaria. But the railroad connecting the port to Bulgaria proper ran for 40 miles through Turkish territory. Turkey gave this road and the territory it crossed to Bulgaria in July, 1915. Shortly afterward the Bulgarians entered the World War beside the Turks and the Germans. Dedeagatch was held throughout the World War, though the port was repeatedly bombarded by Allied warships.

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tion are becoming more and more able to compete with transportation on land and water.

"During this year our own Post Office Department will establish a mail service between New York and San Francisco, and will make the trip in twenty-seven hours, total elapsed time.

"The public, in general, has a misconception of the dangers incident to aviation. Military aviation will always be dangerous, because the aircraft employed must have the greatest speed, the greatest gun power, and the greatest lifting capacity. These things are strained to the limit, so we may be able to compete with possible enemies. Also, in order to be able to support each other, military airplanes have to fly in close formations, through all kinds of weather and under all conditions.

Safer Than Land Travel

"On the other hand, commercial aircraft may be constructed with slow landing speeds, large factors of safety, and with reliable motors that weigh a little bit more than the military engines. The airways, with their landing fields, weather service, and radio telegraphy between airdromes, may be so organized that they will give more security than the railways with their block systems, switches, and repair facilities.

"In Europe the commercial air service, carrying passengers and freight, has operated more miles with fewer casualties than have the railways during the past year.

"The airplane really originated in the United States and until recently held the world's altitude record, the world's endurance record, and the world's speed record."

Bulletin No. 1, April 9, 1923.

Form for Renewal of Bulletin Requests

Many requests for the Geographic News Bulletin were made for the year ending with an April, 1923, issue. If you desire the Bulletins continued kindly notify The Society promptly. The attached form may be used:

School Service Department
National Geographic Society
Washington, D. C.

Kindly send ..... copies of the Geographic News Bulletin for the school year beginning with the issue of April 2, for class room use, to

Name.....

Address for sending Bulletins.....

City ..... State .....

I am a teacher in ..... School ..... grade.

Enclose 25 cents for each annual subscription

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The Sahara: What We Do and Do Not Know About It

PASSAGE recently of a fleet of specially constructed automobiles across the Sahara Desert from the Mediterranean to the once mysterious city of Timbuktu, in less than a month—one-third the time required by camel caravans—serves to emphasize how little is known of this vast region, whose name is familiar to every school child.

The trouble with popular knowledge about the Sahara is, to paraphrase, that we know so much that isn't so.

Not a "Sea of Sand"

Everyone "knows" that it is a "sea of sand," for example, when, as a matter of fact, it is predominantly a land of rocky plateaus and mountains, with sand plentiful enough, but playing a minor rôle.

We know that it is tremendously hot; but we often forget that it is also tremendously cold after the sun goes down.

We know that the whole region is "bone dry," when in reality the mountains of the interior receive considerable rain and are even said by some travelers to be capped with snow during a part of the year; and area after area is being shown to have water available from artesian reservoirs in the earth below. When the soil is given water it yields most satisfactorily as the oases with their springs, which are natural artesian wells, have proved for ages.

There are good enough reasons for the prevalent misconceptions and the general lack of knowledge about the Sahara. It was known first from its northeastern corner, where it stretches westward from the Nile; and there it is in truth a "sea of sand." The vast, billowy, shifting dunes of the Libyan Desert, then, inspired a striking word picture, which came to be applied by the world to the whole Sahara. The fact that a band of sand dunes also extends pretty much along the entire northern edge of the great desert for a hundred or more miles inland from the Mediterranean coast, furnished further circumstantial evidence to convict the Sahara of being a "sea of sand."

Fanatics Discouraged Exploration

The desolate sand dunes were enough in themselves to discourage most would-be travelers who might have found the truth to the south. Add to this that the people who came out of the sands were fierce, fanatical warriors who early established reputations for massacring strangers first and wondering about their errands afterwards, and it is small wonder that the European world went on century after century without knowing anything about the Sahara.

Behind the bulwarks of sand that stretch in a semi-circle from the Nile south of the Mediterranean, below the Atlas Mountains and to the Atlantic, lies the real, and, until recently the unknown, Sahara. Recent estimates are that loose sands make up only between one-tenth and one-ninth the area of the Sahara. South of Algeria the northern sands give way to rising, rocky ground, which leads to an extensive plateau of massive rock, pebbles and boulders, and finally

UMI

Bulgaria saw her dream of an Aegean port fade away for the second time on October 28, 1918, just two weeks before the Germans signed the armistice, when the Allies landed troops at Dedeagatch and marched toward Adrianople.

By the Treaty of Neuilly, Bulgaria gave Dedeagatch to the Allies; and by the Treaty of Sevres it was turned over to Greece. Now that the Treaty of Sevres has been torn up, Bulgaria again advances her claim.

Bulletin No. 2, April 9, 1923.

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A BULGARIAN FARM SCENE: AT THE WELL

Balkan countries are chiefly agricultural. Manufacturing is primitive and of little volume. Outside of the larger towns, for the most part, the people have hardly learned to need products that cannot be fashioned by the family in the home. Cloth and a few simple household implements of metal constitute the whole demand upon civilization of the average Balkan peasant family.

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Alias Warsaw, Poland

WHAT is the capital of Rzeczpospolita Polska? Answer, Warszawa.

Probably that leaves you cold. But if someone wanted to know the name of Poland's capital you could doubtless snap out "Warsaw" with the best of them.

Which merely goes to show that there is sometimes justification for our habit of dubbing other countries' place names by our own pseudonyms. To add to the confusion, hundreds of places in the new countries of Europe have acquired new official designations since the peace treaties were signed.

Has the Gaiety of Paris

Warsaw is forever being compared to Paris, and rightly. The somberness and heaviness and matter-of-factness often found in the great cities of Germany and Russia and England have always been lacking in Warsaw. Even a century of oppression could not entirely break the Polish spirit of gaiety and optimism nor alter greatly the results this spirit had wrought in fashioning the Polish capital.

To carry the comparison further, the Parisians are lovers of beauty and so are the people of Warsaw. It is significant that the Polish president was attacked at an art exhibition. The presence of the Polish chief executive on such an occasion makes as true a picture as a French president at a new theater, a British King at a board of trade or a financial congress, or a President of the United States dedicating a great engineering work.

Finally, Warsaw may be compared to Paris in some ways upon the score of physical arrangement and appearance. The city is filled with impressive old cathedrals, churches, and palaces, and has numerous stately public buildings. Wide, tree-lined boulevards radiate from the center of the city, some leading to beautiful and most elaborately developed parks. But Warsaw is not wholly a city of wide avenues and open spaces. It has its ancient portion of narrow, tortuous streets whose darkness and quaintness take one back to the Middle Ages.

Importance Inevitable

Warsaw's history is both long and turbulent. It had its beginnings in the ninth century; and its start, like that of so many other great cities of Europe, was around the castle of a feudal lord. In 1550 it became the capital of the then powerful Polish Kingdom, and has since played a rôle of importance in European history. Inevitably it grew to be a great city and inevitably it felt the hand of numerous conquerors. For geographical position marked it as one of the greatest of European centers.

One feels that, like the lines of force about a magnet, Warsaw's lines of trade must have existed from the first, though invisible. Now they have taken shape in steel and wood railroads extending from the city like spokes of a great wheel, off toward Petrograd, Moscow, Odessa, Vienna, Prague, Berlin, and Danzig. In a Europe at peace it would occupy much the position of St. Louis in the United States, which lies in a strategic position between the raw materials

UMI

900 miles from the coast are crags of the Hoggar Mountains, 8,000 to 9,000 feet high.

10,000 Foot Mountains

This roof-peak of the Sahara is almost exactly midway between the Mediterranean and the Gulf of Guinea, and not far from the half-way point between the Nile and the Atlantic. From it plateaus slope in every direction; but to the southeast the descent is only temporary, for farther in that direction lie other ranges, culminating in the Tibestis, with a peak 10,600 feet high. It is the highland portions of the Sahara, regions strikingly different from the sand dune sections, that are the homes of the fierce, veiled Tuaregs, believed to be descendants of the pre-Arab peoples. They have constantly preyed on the camel caravans that Arabs and Jews have sent periodically across the desert.

The French, since their political entry into northern Africa at Algiers, in 1830, have extended their control farther and farther into the desert, establishing posts in the principal oases. They have never satisfactorily gotten the central plateau region in hand, however. The recent successful automobile expedition across sand, rocks and mountains, is looked upon as an important step in opening up this key region to the great desert and to the control of its important north-south caravan routes.

Bulletin No. 3, April 9, 1923.

Note to Teachers

Following is a partial bibliography, extracted from "The Cumulative Index to the National Geographic Magazine" (1899-1922, inclusive), which index may now be had from the headquarters of the National Geographic Society. (Cloth $1.50, postpaid in U. S. A.) A limited supply of some numbers of The Geographic may be ordered from The Society's offices at the prices named. Those marked with an asterisk (*) are out of print, but may be consulted in any well-equipped library.

Aviation: America in the Air. By Brig. Gen. William Mitchell. Vol. XXXIX, pp. 339-352, 8 ills., one and three-quarters page map, March, 1921. 50c.

Fighting Insects With Airplanes. By C. R. Neillie and J. S. Houser. Vol. XLI, pp. 333-338, 6 ills., March, 1922. (*)

The First Alaskan Air Expedition. By Capt. St. Clair Streett. Vol. XLI, pp. 499-522, 37 ills., 1 page map, May, 1922. 50c.

From London to Australia by Aeroplane. By Sir Ross Smith, K. B. E. Vol. XXXIX, pp. 229-339, 84 ills., 1 page map, March, 1921. 50c.

Bulgaria and Its Women. By Hester Donaldson Jenkins. Vol. XXVII, pp. 377-400, 22 ills., April, 1915. 50c.

Tirnova, The City of Hanging Gardens. By Felix J. Koch. Vol. XVIII, pp. 632-640, 7 ills., Oct., 1907. (*)

Partitioned Poland. By William Joseph Showalter. Vol. XXVII, pp. 88-106, 12 ills., Jan., 1915. 50c.

Sahara: The Country of the Ant Men (Erg). By Thomas H. Kearney. Vol. XXII, pp. 367-382, 11 ills., 1 half-page map, April, 1911. 75c.

Here and There in Northern Africa. By Frank Edward Johnson. Vol. XXV., pp. 1-132, 113 ills., Jan., 1914. (*)

The Sacred City of the Sands (Kairowan, Tunisia). By Frank Edward Johnson. Vol. XXII, pp. 1061-1093, 25 ills., 1 half-page map. Dec., 1911. 75c.

Hungary: A Land of Shepherd Kings. By C. Townley-Fullam. Vol. XXVI, pp. 311-393, 92 ills., 1 page map, October, 1914. (*)

Saint Stephen's Fete in Budapest. By DeWitt Clinton Falls. Vol. XVIII, pp. 548-558, 9 ills., August, 1907. (*)

Available Maps

For the information of many teachers who inquire about The National Geographic Society's Maps, the following are available while the supply lasts:

Map of the New Europe (30 x 33 inches); New Map of Asia (28 x 36 inches); New Map of South America (25 x 35 inches); New Map of Africa (28 x 32 inches); New Map of the Countries of the Caribbean (23½ x 42 inches, and New Map of the United States (28 x 38 inches), paper, $1 each; on map linen, $1.50 each. Also, Races of Europe Map (20 x 24 inches), paper, 25 cents; linen, $1; Map of the Islands of the Pacific (18 x 24 inches), paper, 50 cents; linen, $1; Map of the Western Theater of War (26 x 31 inches), paper 50 cents; linen, 75 cents; Map of Mexico (1916) (19 x 28 inches), paper, 25 cents; linen, 75 cents, and Map of Alaska (1914) (15 x 20 inches), paper, 50 cents.

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Hungary's Great Lake Runs Away

"EVEN the lake is running away from the schiebers." Thus are the wags of Hungary explaining the mysterious behavior of Hungary's and Central Europe's greatest body of fresh water, Lake Balaton, while scientists are silent. The lake, until recently brimming full, now seems on the way toward drying up.

If Seneca Lake or Lake Tahoe were within fifty miles of Washington to serve as the Capital's pleasure resort and were rapidly drying up for no apparent reason the phenomenon would be comparable to that in Hungary for Balaton is in easy automobile reach to the southwest from Budapest.

Only Important Hungarian Lake

Balaton is the only lake of any importance in Hungary. During the summer season the people of Budapest flock there by rail and automobile, and the day's temperature of the water is as dominant a topic of conversation as is the fairness of the sky to the holiday golfer back home. But almost monthly of late one could note the receding shore-line: season after season one must walk farther and farther from the old shore and its bathhouses and pavilions to enjoy a swim in the once brimming lake. Rains have been as frequent as ever, outlets remain seemingly as before, and few careful scientists have hazarded a guess as to the reasons for the lake's behavior. But the wags among the vacation crowds are less reticent and explain with a chuckle that "even the lake is running away from the schiebers"—the slang term for the war-profiteers who have taken a heavy toll in Hungary as in the remainder of Central Europe.

Lake Balaton is some 45 miles long and varies in width from three to ten miles. Its maximum area was 420 square miles, including flooded marsh lands and its greatest depth more than 100 feet. On the north rugged hills approach the lake, contributing a picturesque beauty which has drawn there many villa builders. To the south, east, and west, however, the rolling Hungarian plains reach up to the now receding shore-line.

Inland "Atlantic City"

Siofok, on the southeastern shore, is the diminutive inland Atlantic City of Hungary. So many war-enriched peasants make their homes there that it is called "the town of millionaire peasants." But the quarters near the lake yield the resort's true savor; there Siofok is seen to be a place of restaurants and villa-like hotels, cabarets and dancing pavilions, gaming casinos, band-stands, bath-houses, and boating piers. One omission may stir conflicting emotions in the breasts of American tourists to Siofok, depending on their years and tastes: there are no Coney Island attachments.

Bathing at Siofok is not a thing of exhilaration. The water is usually placid and near shore on a summer day it feels as though fresh from a hot-water tap ministered to by an efficient janitor. Farther from the shore the water is cooler, but he who would swim must wade a seemingly interminable distance. Some

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and foodstuffs of the West and the factories and consumers of the East; and at the same time helping to exchange products between the North and the South. In addition Warsaw is itself an important manufacturing center. Its trade and industry and politics together have built up a population close to the million mark, making it one of the half dozen greatest cities of the European mainland.

The country of which Warsaw is the capital must not be looked upon as one of the "little lands" that sprang into existence after the World War. It is more than half as large as Texas, and has a population six times as great. To put it more emphatically, Poland's population is practically a quarter that of the United States.

Far North as Hudson Bay

Situated half way between Petrograd, which may be taken as representing the north, and Venice on the warm Mediterranean, Warsaw is probably thought of usually as in temperate latitudes. It is in reality as far north as the southern shore of Hudson Bay or the northern coast of Newfoundland. Its winter, however, is not so severe as the location might suggest, but is more nearly comparable to that of New England.

Bulletin No. 4, April 9, 1923.

Photograph and copyright by B. W. Kilburn

THE SWINE MARKET: WARSAW

Russian Poland usually has a winter somewhat similar to that of New England. There is an even cold, with not a great deal of snow, but often with razor-edged winds from the northward. The rivers of this region usually freeze over about the middle of December, and the Vistula is under ice for approximately eighty days during the average winter.

American tourists, in a hurry for their sports, solve the problem by dashing lakeward in motor boats and swimming from their advanced base.

A Cross-section of Hungary

The automobile ride from Budapest to Siofok gives a characteristic view of the country, for it cuts a cross-section through the edge of the famous plains of Hungary. On an excellent road one whizzes past quaint villages of mud-brick dwellings with tile or thatched roofs, picturesque Gypsy camps, carefully cultivated fields, and, above all, through a grazing country where are pastured large herds of long-horn steers such as Texas once knew.

Cattle raising in this region would have little fascination for an American cow-puncher. Wiry mustangs, jingling spurs, chaps, five-gallon sombreros, and whirring lassoes have no place in the picture. Instead, Western Hungary's long-horns are herded by peasants afoot who wear little feather-bedecked hats, carry innocuous looking poles, and are dressed in white fringe-bottomed "flapper" skirts!

Skirted men also tend the less dangerous looking community herds of dairy cattle and grunting swine; and here and there a goose-girl, in colorful peasant garb, minds her hissing flock. From these rural scenes one rolls over a hill and comes suddenly upon Hungary's Atlantic City.

Bulletin No. 5, April 9, 1923.

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THE SHEPHERD AND HIS DOG

Note the short, thick bit of stick suspended from the dog's neck. It is meant to discourage any tendency to wander off.